Signature Series Inbuilt
Installation Guide

Offered by
Signature Automotive Products

Signature Automotive Products inbuilt installation and service manual

Product Overview

Features and Benefits

Thank you for selecting the Signature Series inbuilt from Signature Automotive Products

The signature series inbuilt is the most advanced technological sunroof available in three models: 750, 840, and 925

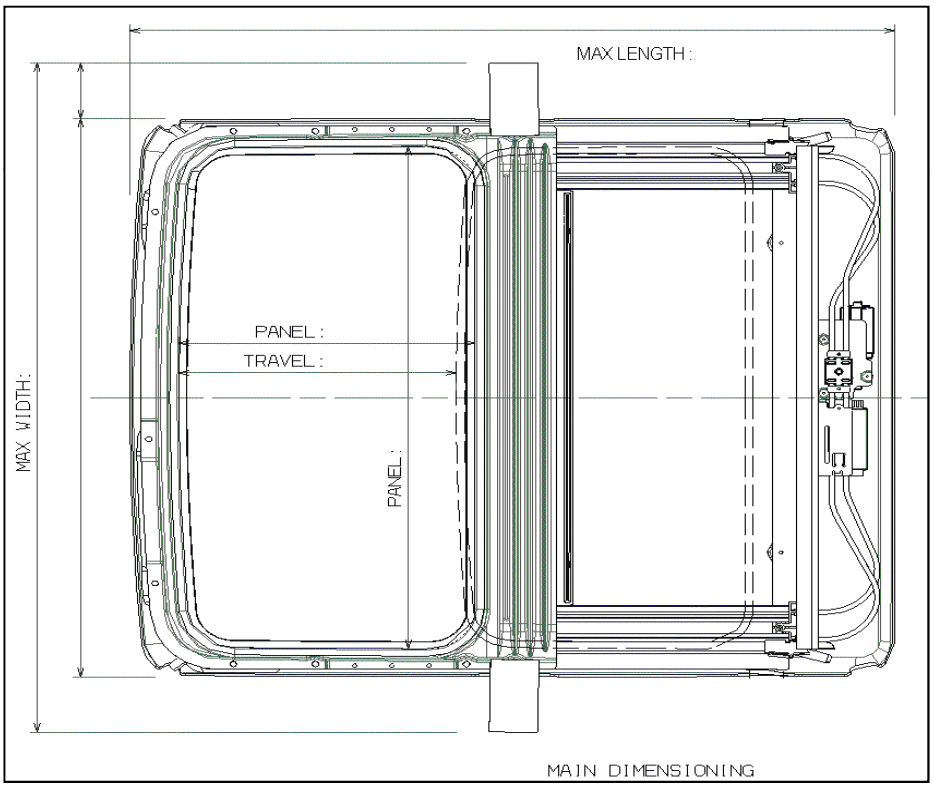
The signature series inbuilt allows you a safe and reliable installation due to the following:

1. It passed all TUV Tests related to FMVSS-Federal Motor Vehicle Safety Standards. Meets or exceeds all applicable FMVSS-Federal Motor Vehicle Safety Standards.
2. It has a patented Headliner Safety System. All installations have a finished OEM interior look.
3. SIPS (Side Impact Protection System) brackets available.

Standard Features

Illuminated Switch with One Touch™	Intermediate Vent Position
Venus® Glass Panel	Programmable Positions
Integrated Wind Deflector	Auto Close
Sliding Sunshade with built in handle	Built in water management system

Technical Drawing



	max length	max width	min width	panel length	panel width	travel
750	39"/990.6mm	33"	33"/838.2mm	17.25"/438.12mm	29"/736.6mm	12.25"
840	43"/1066.8mm	37"	36"/914.2mm	19"/482.6mm	32.5"/825.5	15.5"
925	43"/1092.2mm	40"	38"/965.2	19"/482.6mm	35.75"/908.05mm	16"

Signature Automotive Products inbuilt installation guide

Signature series inbuilt operation instructions

The signature series inbuilt can be operated in two modes, ***Continuous*** and ***One Touch™*** .

Continuous mode allows the asi inbuilt to be operated by holding down the operating switch in either direction.
One Touch™ mode allows the asi inbuilt to be operated without holding the operating switch down and can be canceled by any switch activation.

- To **Open** the glass panel from any position, tap or hold the open button on the operating switch.
The sunshade cannot be closed in this position

- To **Close** the glass panel from any position, tap or hold the middle button on the operating switch.
The sunshade can be closed or opened manually.

- To **Vent** the glass panel from any position, tap or hold the vent button on the operating switch.
The sunshade can be closed or opened manually.

Additional Features

Auto Close function allows the sunroof to close automatically when switching off the vehicle's ignition. During the Auto Close function, simply depress the switch to cancel. This will return the glass panel to the position it was in prior to the start of the Auto Close function. Depressing the switch again will reactivate Auto Close.

Programmable Position: The inbuilt can also be programmed to a preferred open position by depressing both Open and Close switch buttons at the same time for three (3) seconds in the preferred open position. The glass panel will move towards the close position briefly and then return. This confirms the programmed position. To cancel the programmed position, fully vent the glass panel and depress the vent button for five (5) seconds.

Intermediate Vent Position: Using continuous closing mode from the vent position, the glass panel will pause in three (3) intermediate positions prior to reaching the close position. Release the switch button to leave in preferred position.

Changing Switch Illumination Color: With the ignition on, the color of the LED's can be changed from green to red or red to green by holding all three (3) buttons, consecutively, for three (3) seconds. The pre-set color is red.

Initialization Procedure

The IGN has to be ON to be able to perform an initialization procedure

Initialization of the SCU shall take place when:

The first time the SCU is connected to the car battery or any other power source.

The SCU to reset full slide (open) position:

Cylce the glass panel into the full open position, hold the open switch button for five (5) seconds. The roof panel starts moving forward and returns and the new blocked position is established.

Re-initialization:

Cycle the glass panel ino the full vent position, hold the vent switch button for five (5) seconds.

The glass panel will move towards the close position briefly and then return. This confirms the programmed position.

Degrade Mode

Before initial mounting to the sunroof, the SCU is in degrade mode. This means that the sunroof only continues operation with ignition contact switched-on and the **A**nti **T**rap **S**ystem (ATS) inactive.

Signature series inbuilt installation tools

Contents:

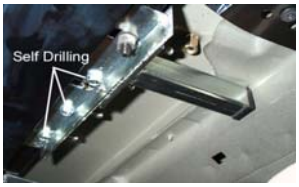
1- Installation Fixture	3720097A70
1- Tooling Kit Box	1640028A70
4- Clamps (original vise grips)	2050008A70
1- Starter Kit Hardware Bag	4180157A11
1- 750/840/925 Hardware Box	4730190A11
1- asi Sweep Gauge	8210071A70
1- 750 Template	8210066A70
1- 840 Template	8210067A70
1- 925 Template	8210068A70
1- Corner Clamp	8290017A70
2-SIP's Bracket Kits	4730195A00

Side Impact Protection System (SIPS)

PN 4730195A00

Installation Instructions

1. After the kit base has been installed, attach the support plate first by aligning the u-cut with the rearward stud of the mounting frame and secure using the provided 8mm self drilling hex bolts.



2. Determine the length between the inbuilt and the vehicle's side rails (leaving approx. a ⅛" for the isolator pad) and cut the reinforcement bar to length. Using the provided 10mm hex nuts and ¼" washers, secure the reinforcement bar to the support plate.

3. Depending on the position of the inbuilt, be sure to align the reinforcement bar with the 'B' pillar.

4. Repeat the procedure for the other side and continue with the installation of your asi series inbuilt.

Contents: 2-Isolator Pad
2-Reinforcement Bar
2-Reinforcement Support Plate
4-Washers
4-10mm Hex Nuts
6-8mm Self Drilling Hex Bolts

Fig.1 - a

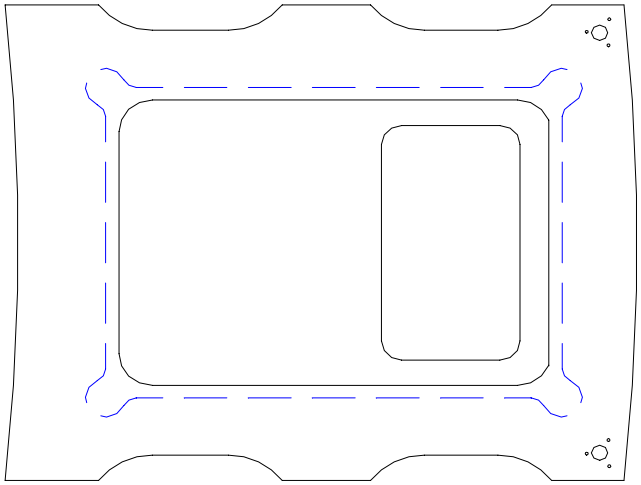
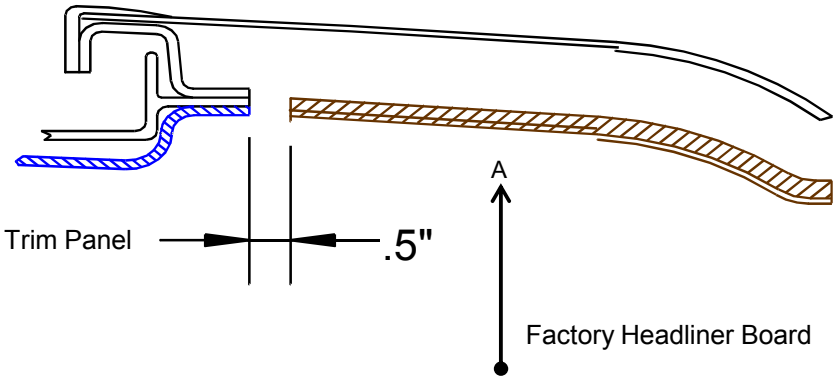


Fig. 1- b



IMPORTANT NOTICE
Pre-installation Check: If the interior trim panel/substrate exceeds point A, it is recommended that the inbuilt be downsized, if applicable.

Side Curtain Air Bag Guidelines

1. Follow the manufactures recommended guide lines regarding the inbuilt application.

2. Insure that proper procedures are followed to deactivate the vehicle's side curtain air bags (reference the owner's manual or the dealership service department) prior to working on the vehicle.

3. All support brackets are to be mounted in such a way that they do not interfere with the deployment of the side curtain air bag (i.e. above or behind the side curtain air bag).

4. Always make sure that the drain tubes are routed in a way that they do not interfere with the deployment of the side curtain air bag. Do not place tape, glue, screws or headliner onto air bags.

5. Always replace any retaining clips which may have been broken during the removal procedure. Never glue or use screws to re-attach the factory headliner board to the side rails of the vehicle.

6. Prior to cutting the factory headliner board make sure that you retain as much of the original headliner board as possible. (Fig. 1-a & b)

7. For more information please contact the Inalfa Sunroofs Technical Department at (800) 521-9753.

Installation Instructions

Determine Application

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Determine application by referring to the Assist Program or the Application Chart for that particular vehicle.

Consideration should be given to dome lights, consoles, and ribbed formed roof skins.

If you are unsure of an application and you have access to the vehicle, it is recommended that you use the substrate to verify the application. The headliner may need to be removed if you are unfamiliar with the vehicle.

Pre-Installation Inspection

Before you proceed, check to ensure that you have all the components for a complete installation. Also, ensure the sunroof housing has not been damaged in shipping.

Check for the following:

Sunshade, Trim Ring, Mounting Frame, Substrate, SCU, Hardware Bag, Housing

Hardware Bag contents:

Bracket Side	4	Rubber Shim	1
Clamp Drain Tube	4	Flange Nuts	8
Substrate Fastener Clips	4	Drain Tubes	4
S/shade Handle w/ Foam	1	Spacer 750/840/845/925	2
Owners Manual	1	Screw S/Tap Mtg	23
1/8" Trim Ring Rivets	12		

Remove the sunroof from the box and place the unit on the workbench.

At this time, using a 12v power source, test the functionality and initialize the sunroof.

Do not use a battery charger.

Note: Leave the glass panel in the vent position for sunshade removal.

Vehicle Prep for Installation

Vehicle Protection

Disconnect the battery by disconnecting the negative side of the battery.

Protective Covers (Interior)
Place protective covers on the following:
- Carpeting
- Steering Wheel
- Center Console
- Seats

Protective Covers (Exterior)
Place protective covers on the following:
- Hood
- Doors
- Deck Lid
- Exterior Glass
- Rear of Roof

Removal of Interior Trim
Remove the following items:
- Garnish Moldings
- Sun Visors
- Overhead Consoles
- Coat Hooks
- Assist Straps
- Factory Headliner

Installation Instructions

Sunroof Location

Position the cutting template on the roof skin at the recommended Scribe line (S-line).

If the S-line is unknown:
Position the substrate against the inner roof skin. Allow for consoles and sun visors when determining the position. Locate the center mark of the front of the opening of the substrate and make an up ding in the roof skin.
From outside the vehicle locate the up ding and measure 2.5" (63.5 mm) forward and mark. Align the front edge of the cutting template with the mark.

Center the cutting template square to the windshield.

Using a grease pencil, mark a line on the roof skin using the outer edge of the template.

Remove the template.

Using 2" (50.8 mm) wide masking tape, apply the tape to the roof skin approximately 1/8" (3 mm) outboard of the marked line of the cutting template.

Removal of Roof Bows and Roof Insulation

Break the bond between the roof bows and roof skin using an automotive windshield removal kit. These kits may be purchased through your local glass company or use .035 piano wire.

Insert a protective plate between the roof skin and roof bow at the side rail to prevent damage to the roof skin.

Cut roof bows flush with the side rails using aviation snips or other cutting tools.

Note: Retain roof bow for later use if dome lamp is mounted on roof bow.

Installation Instructions

Cutting Roof skin

Using an air chisel, cut a starter hole approximately 3" (76 mm) in diameter in the center of the roof opening.

Using Bosch Shears, cut opening approximately 1" (25.4 mm) inside of the marked line.
Using Bosch Shears, make final cut by cutting on the marked line.

Note: When cutting with Bosch Shears, always cut in counter clockwise direction.

Prefit the trim ring into the roof opening to ensure enough clearance.

Prime the cut edge using anti-corrosive metal primer.

Remove the masking tape from the roof surface.

Note: Always peel the masking tape toward the opening to prevent the paint from flaking.

Trim Ring / Mounting Frame Installation

Trim Ring Mounting Frame Prep

Apply a 1/4"(6.35mm) bead of non-corrosive silicone to the underside of the trim ring. Care should be taken to ensure a continuous bead.

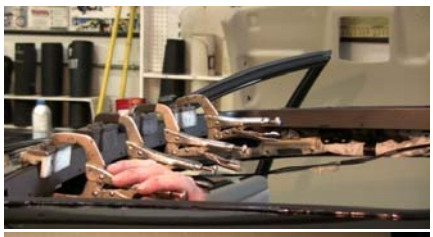
Apply a 1/4" (6.35mm) bead of non-corrosive silicone to all surfaces of the mounting frame that contact the underside of the roof.

Position the trim ring into the roof opening from the outside the vehicle.

Installation Instructions

Install Mounting Frame to the Trim Ring

From inside the vehicle, raise the mounting frame to the trim ring. Insert the mounting frame at the rear of the opening into the U-channel of the trim ring.



Position and secure the trim ring to the mounting frame using four trim ring clamps, spaced equally across the front.

Caution: Over tightening the clamps will cause roof skin distortion and under tightening could cause improper compression. Each clamp should have equal clamping force.

Using a 1/8" drill bit, pre-drill the rivet holes.

Insert the rivet into the pre-drilled hole.

Using a rivet gun, seat the rivet to the trim ring. Ensure the rivet is flush to the trim ring. Continue this process for the remaining rivets, using two clamps per side and one per front corner.

Insert the spreader gauge.

Once the spreader gauge is attached, insert the Rubber Shim into the rear section of the trim ring. Cut off any excess rubber material. Ensure the shim is properly positioned.

Lay the contour gauge on the trim ring at the rear of the opening to check for cross car roof skin sweep.

Installation Instructions

Attach the Mounting Frame Brackets

Use a screw gun and self tapping screws to attach the mounting frame brackets to the vehicle side rails. Check that the roof skin matches the mounting frame sweep, using the Sweep Gauge. Adjust accordingly.

Clean off any excess silicone.

Sunshade

Removing the Water Channel and Sunshade

Cycle the glass panel to the vented position.

Note: Before cycling the sunroof, the sunshade handle must be in front of the water channel.

Remove the two T-20 Torq Screws.

Remove the water channel.

Slide the sunshade to the rearward position and remove the sunshade from the track section by gently flexing upward.

Note: To keep from damaging the sunshade do not over bend.

Wrapping Sunshade Panel

Cut a piece of new headliner material 24" x 30" (609.6 mm x 762 mm)

Lay the new material on a clean surface with the reverse side up.

Spray a light coat of trim adhesive to the bottom side and side vertical edges of the sunshade panel.

Remove the sunshade panel and spray a light coat of trim adhesive to the reverse side of the headliner material. Allow five (5) minutes for both glued surfaces to set-up. (Glued surfaces will feel tacky to the touch.)

Position the sunshade panel to the headliner material and adhere the glued surfaces together.

Smooth the material from the center out.

Fold the material over the edge along the front and rear and sides.

Trim away any extra material, leaving enough to fold over the front and rear edges.

Cut out material for the finger well hole and snap the handle into place.

Note: Do not cover backside of sunshade handle with material.

Installation Instructions

Sunshade Installation

To install the finished sunshade into the sunroof, reverse the removal steps.

Cycle the glass panel to the vented position.

Note: Before cycling the sunroof, the sunshade handle must be in front of the water channel.

Flex the sunshade into the middle tracks, avoiding over-bending.

Push the sunshade forward to the closed positon and install the water channel.

Sunroof Installation

Raise the sunroof into position by aligning the sunroof with the two alignment studs located on the mounting frame.

Tighten the combi nuts, starting at the front and working outward.

Prior to tightening the sunroof to the mounting frame, check the alignment of the glass panel and trim ring to assure consistent compression.

It is important that you temporarily support the sunroof using two support jacks. The unit should be supported until the mounting frame brackets have been installed.

Support Brackets

Install the four support brackets with the self tapping screws provided. It may be necessary to modify the length of the brackets before installing.

Switch Bracket/Overhead console

Depending on the application the switch bracket may be necessary. (Sold Seperately)

NOTE: Console applications may require some re-work in order to properly position the switch.

Installation Instructions

Drain Tube Routing

Drain tubes should be routed so that water will exit the vehicle. Holes may be drilled to provide access. Always apply anti corrosive primer to exposed metal. Deburr any jagged edges to avoid cutting the tube.

NOTE: Drain tube routing will vary greatly from vehicle to vehicle. The drain tube must always be at a downward angle. Sharp bends are to be avoided.

Front: Route the drain tube inside or outside the "A" pillar, which ever is more accessible. Test the routing of the drain tube for proper drainage

Rear: Most vehicles have existing holes in the rail structure that can be utilized to route rear hoses. Route the drain hose either forward of the wheelhouse into the rocker panel or rear of the wheelhouse into the trunk boot area.

Test the routing of the drain tube for proper drainage.

Attach the drain tubes to the sunroof using the four (4) drain tube clamps.

The final test for proper water drainage is to pour water into the sunroof to make sure water exits the vehicle properly.

Electrical

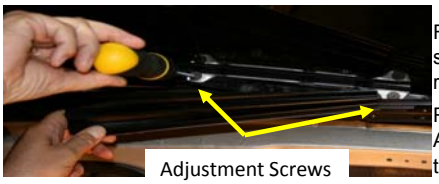
Route the wire assembly as required for the particular vehicle. Wires should be routed on top of brackets or other structures. The hot lead should be attached directly to the vehicle's 12 volt battery. All wires should be secured to prevent rattles.

Connector	Power with ignition off	Power with ignition on
Wire Number 1 (Red)	12V	12V
Wire Number 2 (Green)	Ground	Ground
Wire Number 3 (Blue)	ZER0 V	12V

Reconnect the vehicle battery and test cycle the sunroof to verify it is fully functional. Initialize SCU (see initialization procedure).

Optional relay harness, reference diagram page.

Glass panel adjustment



FRONT HEIGHT: Adjust the front of the glass panel by loosening the two (2) front T-25 torque screws. Adjust the glass panel so the front edge is flush or a maximum of 1 mm below the trim ring and tighten the screws.

REAR HEIGHT: Adjust the rear of the panel by loosening the two (2) rear T-25 torque screws. Adjust the glass panel so the rear edge is flush or a maximum of 1 mm above the trim ring and tighten the screws.

Note: Torque all 4 screws to 35in-lbs.

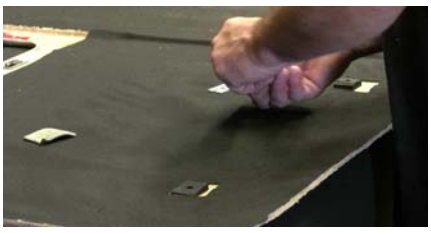
Substrate and Headliner Prep and Install

Substrate Prep

Depending on the application, the substrate may require trimming for proper clearance.

Before installing the substrate into the vehicle, spray trim adhesive on the back side of the substrate.

Wrap foam or headliner material to areas which come in contact with the sunroof kit.



Cut two relief holes and attach the two foam block spacers provided in the hardware bag.

Installation Instructions

Factory Headliner Prep

Measure the cut line for proper placement of substrate.

Place the substrate onto the factory headliner and scribe the cut line.

Cut the center of the factory headliner to the scribe line.

NOTE: Retain as much of the factory headliner as possible, due to side curtain airbag specifications.

Use 2" masking tape to create a line along the rear, side and front edges of the opening.

Apply trim adhesive to the back side of the new headliner material and the masked areas of the factory headliner. Allow 5 minutes for both glued surfaces to set-up. (Glued surfaces will feel tacky to the touch.)

Remove the masking tape prior to adhering the material to the headliner board.

Measure enough material to cover the factory headliner board.

Apply the new headliner material to the front edge of the headliner board and stretch the material to the back edge.

Trim the excess material around the outer edge, visors, consoles and handles of the headliner board.

The new headliner is now ready for installation.

Substrate Installation

Position substrate to the sunroof and attach using the 3 metal retaining clips at the rear of the opening.

Attach the two front plastic retaining clips to the front cross member, ensuring the clips are flush with the substrate, then attach the two rear plastic retaining clips.

Installation Instructions

Factory Headliner Installation

Place the finished factory headliner into the vehicle

Align the factory headliner into position.

Once the new headliner is in place, re-attach all of the vehicle's interior components.

Carefully cut a hole in the headliner material at the opening. Leave about three (3) inches on each side to wrap the material up into the opening.

Install the switch into the console.

Stretch the headliner material into the opening.

Tuck the excess material over the opening edge.

Bend the two front tabs to secure to the front cross member.

Final Inspection & Cleaning

Re-initialize the sunroof kit by running it to the full vent position and continuing to press the front switch button for five (5) seconds. The glass panel will move toward the tilt position and then return briefly. This confirms re-initialization.

Clean the interior and exterior of the vehicle.

Place owners manual into vehicle.